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| **Program #1\_1** | **Date: 07/12/2023** |
| **Write a program to print ‘Welcome to Java’.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 1\_1: Write a program to print ‘Welcome to Java’.  public class P1\_1\_welcome\_to\_java{  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  System.out.println("Welcome to Java.");  }  } |

**OUTPUT:**

|  |
| --- |
| Microsoft Windows [Version 10.0.19045.3693]  (c) Microsoft Corporation. All rights reserved.  C:\Users\marsh>E:  E:\>cd MCA\SEM 2\JAVA PROGRAMMING (MCA202)  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)>javac P1\_1\_welcome\_to\_java.java  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)>java P1\_1\_welcome\_to\_java  Muhammad Anshad P A  Welcome to Java.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)> |

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| **Program #1\_2** | **Date: 07/12/2023** |
| **WAP to display two numbers received as command line argument, and print its product.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 1\_2: WAP to display two numbers received as command line argument, and print its product.  import java.io.\*;  public class P1\_2\_product\_of\_two\_no{  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  int a,b;  String s;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the first number : ");  s=din.readLine();  a=Integer.parseInt(s);  System.out.println("\nEnter second number : ");  s=din.readLine();  b=Integer.parseInt(s);  System.out.println("\nEntered two numbers are : "+a+" and "+b);  System.out.println("\nThe product of given two numbers = "+(a\*b));  }  catch(Exception e){  System.out.println("Error : "+e);  }    }  } |
|  |

**OUTPUT:**

|  |
| --- |
| Microsoft Windows [Version 10.0.19045.3693]  (c) Microsoft Corporation. All rights reserved.  C:\Users\marsh>E:  E:\>cd MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P1\_2\_product\_of\_two\_no.java  Note: P1\_2\_product\_of\_two\_no.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P1\_2\_product\_of\_two\_no  Muhammad Anshad P A  Enter the first number :  4  Enter second number :  3  Entered two numbers are : 4 and 3  The product of given two numbers = 12  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program #1\_3** | **Date: 07/12/2023** |
| **WAP to read two numbers and display the output in the form of ‘Sum of 2 and 3 is 5.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 1\_3: WAP to read two numbers and display the output in the form of ‘Sum of 2 and 3 is 5  import java.io.\*;  public class P1\_3\_disp\_sum{  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  int a,b;  String s;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the first number : ");  s=din.readLine();  a=Integer.parseInt(s);  System.out.println("\nEnter second number : ");  s=din.readLine();  b=Integer.parseInt(s);  System.out.println("\nSum of "+a+" and "+b+ " is "+(a+b));  }  catch(Exception e){  System.out.println("Error : "+e);  }  }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P1\_3\_disp\_sum.java  Note: P1\_3\_disp\_sum.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P1\_3\_disp\_sum  Muhammad Anshad P A  Enter the first number :  2  Enter second number :  3  Sum of 2 and 3 is 5 |

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| **Program #1\_4** | **Date: 07/12/2023** |
| **WAP to accept two numbers from the keyboard and swap them.** | |

**Source Code:**

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| --- |
| //PROGRAM 1\_4: WAP to accept two numbers from the keyboard and swap them.  import java.io.\*;  public class P1\_4\_swap{  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  int a,b,temp;  String s;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the first number : ");  s=din.readLine();  a=Integer.parseInt(s);  System.out.println("\nEnter second number : ");  s=din.readLine();  b=Integer.parseInt(s);  System.out.println("\nValues Before swapping:\na = "+a+"\nb = "+b);  temp=a;  a=b;  b=temp;  System.out.println("\nValues After swapping:\na = "+a+"\nb = "+b);    }  catch(Exception e){  System.out.println("Error : "+e);  }    }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P1\_4\_swap.java  Note: P1\_4\_swap.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P1\_4\_swap  Muhammad Anshad P A  Enter the first number :  9  Enter second number :  45  Values Before swapping:  a = 9  b = 45  Values After swapping:  a = 45  b = 9  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 2\_1** | **Date: 07/12/2023** |
| **WAP to read three numbers and the maximum.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 2\_1: WAP to read three numbers and the maximum.  import java.io.\*;  public class P2\_1\_maximum\_of\_3{  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  int a,b,c;  String s;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the first number : ");  s=din.readLine();  a=Integer.parseInt(s);  System.out.println("\nEnter second number : ");  s=din.readLine();  b=Integer.parseInt(s);  System.out.println("\nEnter third number : ");  s=din.readLine();  c=Integer.parseInt(s);  if(a>b && a>c){  System.out.println("Maximum number = "+a);  }  else if(b>a && b>c){  System.out.println("Maximum number = "+b);  }  else{  System.out.println("Maximum number = "+c);  }  }  catch(Exception e){  System.out.println("Error : "+e);  }    }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P2\_1\_maximum\_of\_3.java  Note: P2\_1\_maximum\_of\_3.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P2\_1\_maximum\_of\_3  Muhammad Anshad P A  Enter the first number :  46  Enter second number :  -48  Enter third number :  25  Maximum number = 46  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 2\_2** | **Date: 07/12/2023** |
| **Find the minimum of three numbers using a single statement.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 2\_2: Find the minimum of three numbers using a single statement.  import java.io.\*;  public class P2\_2\_minimum\_of\_3{  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  int a,b,c,min;  String s;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the first number : ");  s=din.readLine();  a=Integer.parseInt(s);  System.out.println("\nEnter second number : ");  s=din.readLine();  b=Integer.parseInt(s);  System.out.println("\nEnter third number : ");  s=din.readLine();  c=Integer.parseInt(s);  min= c<(a<b?a:b)?c:(b<a?b:a); //  System.out.println("Minimum number = "+min);    }  catch(Exception e){  System.out.println("Error : "+e);  }    }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P2\_2\_minimum\_of\_3.java  Note: P2\_2\_minimum\_of\_3.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P2\_2\_minimum\_of\_3  Muhammad Anshad P A  Enter the first number :  -25  Enter second number :  -45  Enter third number :  2  Minimum number = -45  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 2\_3** | **Date: 08/12/2023** |
| **WAP to search for a given element in an array.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 2\_3: WAP to search for a given element in an array.  import java.io.\*;  public class P2\_3\_array\_search{  public static void lsearch(int a[],int n,int s){  int i,flag=0;  for(i=0;i<n;i++){  if(a[i]==s){  flag=1;  break;  }  }  if(flag==1){  System.out.println("\nElement "+s+" found at index "+ i);  }  else{  System.out.println("\nElement Not found!");  }    }  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  int a[],n,i,s;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter how many elements to read : ");  n=Integer.parseInt(din.readLine());  a =new int[n]; //array initialization  System.out.println("Enter "+n+" values : ");  for(i=0;i<n;i++){  a[i]=Integer.parseInt(din.readLine());  }  System.out.println("Displaying values : ");  for(i=0;i<n;i++){  System.out.println(a[i]);  }  //Search part  System.out.println("\nEnter the element to search : ");  s=Integer.parseInt(din.readLine());  lsearch(a,n,s); //calling function    }  catch(Exception e){  System.out.println("Error : "+e);  }    }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P2\_3\_array\_search.java  Note: P2\_3\_array\_search.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P2\_3\_array\_search  Muhammad Anshad P A  Enter how many elements to read :  5  Enter 5 values :  10  20  30  40  50  Displaying values :  10  20  30  40  50  Enter the element to search :  30  Element 30 found at index 2  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 2\_4** | **Date: 08/12/2023** |
| **WAP to sort elements in an array in ascending order.** | |

**Source Code:**

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| --- |
| //PROGRAM 2\_4: WAP to sort elements in an array in ascending order.  import java.io.\*;  public class P2\_4\_array\_sort{  public static void sortarr(int a[],int n){  int i,j,temp;  for(i=0;i<n;i++){  for(j=i+1;j<n;j++){  if(a[i]>a[j]){  temp=a[i];  a[i]=a[j];  a[j]=temp;  }  }  }  System.out.println("\nSorted Successfully");  }  public static void disp(int a[],int n){  int i;  System.out.println("\nDisplaying array values : ");  for(i=0;i<n;i++){  System.out.println(a[i]);  }  }  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  int a[],n,i;  din =new DataInputStream(System.in);  try{  System.out.println("\nEnter how many elements to read : ");  n =Integer.parseInt(din.readLine());  a = new int[n];//array  System.out.println("Enter "+n+" values : ");  for(i=0;i<n;i++){  a[i]=Integer.parseInt(din.readLine());  }  disp(a,n);  sortarr(a,n);  disp(a,n);  }  catch(Exception e){  System.out.println("Erorr : "+ e);  }  }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P2\_4\_array\_sort.java  Note: P2\_4\_array\_sort.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P2\_4\_array\_sort  Muhammad Anshad P A  Enter how many elements to read :  5  Enter 5 values :  25  5  10  15  2  Displaying array values :  25  5  10  15  2  Sorted Successfully  Displaying array values :  2  5  10  15  25  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 2\_5** | **Date: 08/12/2023** |
| **Write a program to print the row wise and column wise sum of a 2D array.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 2\_5: Write a program to print the row wise and column wise sum of a 2D array.  import java.io.\*;  public class P2\_5\_2Darray\_sum{  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  din = new DataInputStream(System.in);  int rows,cols,rowsum,colsum,i,j;  int a[][];  a = new int[100][100];  try{  //READ 2D array:  System.out.println("\n2D array-->\nEnter the number of rows (MAX 100): ");  rows=Integer.parseInt(din.readLine());  System.out.println("\nEnter the number of columns (MAX 100): ");  cols=Integer.parseInt(din.readLine());  for(i=0;i<rows;i++){  System.out.println("\nEnter values of row "+(i+1));  for(j=0;j<cols;j++){  a[i][j]=Integer.parseInt(din.readLine());  }  }  System.out.println("\nSUM OF ROWS AND COLUMNS-->\n");  //Calculating SUM of rows and columns:  for(i=0;i<rows;i++){  rowsum=0;  for(j=0;j<cols;j++){  rowsum=rowsum+a[i][j];  System.out.print("\t"+a[i][j]);  }  System.out.println(" | "+rowsum);  }    for(i=0;i<cols;i++){  colsum=0;  for(j=0;j<rows;j++){  colsum=colsum+a[j][i];  }  System.out.print("\t"+colsum);  }  }  catch(Exception e){  System.out.println("Error "+e);  }  }  } |
|  |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P2\_5\_2Darray\_sum.java  Note: P2\_5\_2Darray\_sum.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P2\_5\_2Darray\_sum  Muhammad Anshad P A  2D array-->  Enter the number of rows (MAX 100):  3  Enter the number of columns (MAX 100):  3  Enter values of row 1  1  2  3  Enter values of row 2  4  5  6  Enter values of row 3  7  8  9  SUM OF ROWS AND COLUMNS-->  1 2 3 | 6  4 5 6 | 15  7 8 9 | 24  12 15 18  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 3\_1** | **Date: 10/12/2023** |
| **WAP with two functions to check for an integer palindrome.**  **(Function1 should reverse the integer. Function2 should return 1,if it is a palindrome or else 0.)** | |

**Source Code:**

|  |
| --- |
| /\*PROGRAM 3\_1 : WAP with two functions to check for an integer palindrome.  (Function1 should reverse the integer. Function2 should return 1,if it is a palindrome or else 0.)\*/  import java.io.\*;  public class P3\_1\_integer\_palindrome{    //function to reverse the number:  public static int reverseNum(int num){  int digit,rev=0;  while(num!=0){  digit=num%10;  rev=(rev\*10)+digit;  num=num/10;  }  return rev; //returning reversed number .  }  //function to check given number is palindrome or not:  public static int palindromeChecker(int num){  int rev=reverseNum(num);  if(num == rev){  return 1;  }  else{  return 0;  }  }  public static void main(String args[]){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter an integer to check for palindrome:");  int num=Integer.parseInt(din.readLine());    if(palindromeChecker(num)==1){  System.out.println(num+" is a Palindrome.");  }  else{  System.out.println(num+" is NOT a Palindrome.");  }  }  catch(Exception e){  System.out.println("Error : "+e);  }  }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P3\_1\_integer\_palindrome.java  Note: P3\_1\_integer\_palindrome.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P3\_1\_integer\_palindrome  Muhammad Anshad P A  Enter an integer to check for palindrome:  73211237  73211237 is a Palindrome.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

|  |  |
| --- | --- |
| **Program # 3\_2** | **Date: 10/12/2023** |
| **WAP to display numbers from m to n using single while loop.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 3\_2 : WAP to display numbers from m to n using single while loop.  import java.io.\*;  public class P3\_2\_disp\_m\_to\_n{  public static void disp(int m,int n){  int i=m;  System.out.println("\nDisplaying numbers from "+m+" To "+n+" : \n");  while(i<=n){  System.out.println(i);  i++;  }  }  public static void main(String[] args){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  din = new DataInputStream(System.in);  int m,n;  try{  System.out.println("\nEnter value for m : ");  m = Integer.parseInt(din.readLine());  System.out.println("\nEnter value for n : ");  n= Integer.parseInt(din.readLine());  disp(m,n);  }  catch(Exception e){  System.out.println("\nError : "+e);  }  }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P3\_2\_disp\_m\_to\_n.java  Note: P3\_2\_disp\_m\_to\_n.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P3\_2\_disp\_m\_to\_n  Muhammad Anshad P A  Enter value for m :  -3  Enter value for n :  5  Displaying numbers from -3 To 5 :  -3  -2  -1  0  1  2  3  4  5  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

|  |  |
| --- | --- |
| **Program # 3\_3** | **Date: 10/12/2023** |
| **WAP to find the sum of the series 1+(1+2)+(1+2+3)+............ +(1+2+3+…+n) using a single while loop.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 3\_3 : WAP to find the sum of the series 1+(1+2)+(1+2+3)+............ +(1+2+3+…+n) using a single while loop.  import java.io.\*;  public class P3\_3\_sum\_of\_series {  public static void sumOfseries(int n){  int i=1,currsum=0,sum=0;  while(i<=n){  currsum=currsum+i;  sum=sum+currsum;  i++;  }  System.out.println("Sum of series is : "+sum);  }  public static void main(String[] args){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the limit(n) : ");  int n =Integer.parseInt(din.readLine());  sumOfseries(n);  }  catch(Exception e){  System.out.println("\nError : "+e);  }  }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P3\_3\_sum\_of\_series.java  Note: P3\_3\_sum\_of\_series.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P3\_3\_sum\_of\_series  Muhammad Anshad P A  PROGRAM 3\_3 : WAP to find the sum of the series 1+(1+2)+(1+2+3)+..  +(1+2+3+?+n) using a single while loop.  Enter the limit(n) :  3  Sum of series is : 10  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

|  |  |
| --- | --- |
| **Program # 3\_4** | **Date: 10/12/2023** |
| **WAP to find the sum of 1+(2/2!)+(3/3!)+(4/4!)+....+(n/n!) using a single for loop.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 3\_5 : WAP to find the sum of 1+(2/2!)+(3/3!)+(4/4!)+....+(n/n!) using a single for loop.  import java.io.\*;  public class P3\_4\_second\_sum\_of {  public static void sumOfseries2(int n){  int i;  double sum=0,fact=1;  for(i=1;i<=n;i++){  fact = fact\*i; //finding factorial  sum = sum + (i/fact); //dividing by factorial  }  System.out.println("\nSum of series is = "+sum);  }  public static void main(String[] args) {  System.out.println("\nMuhammad Anshad P A");  System.out.println("\nPROGRAM 3\_5 :WAP to find the sum of 1+(2/2!)+(3/3!)+(4/4!)+....+(n/n!) using a single for loop.");  DataInputStream din;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the value of n : ");  int n = Integer.parseInt(din.readLine());  sumOfseries2(n);  }  catch(Exception e){  System.out.println("\nError : "+e);  }  }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P3\_4\_second\_sum\_of  Muhammad Anshad P A  PROGRAM 3\_5 :WAP to find the sum of 1+(2/2!)+(3/3!)+(4/4!)+....+(n/n!) using a single for loop.  Enter the value of n :  3  Sum of series is = 2.5  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

|  |  |
| --- | --- |
| **Program # 3\_5** | **Date: 10/12/2023** |
| **WAP to calculate area of a circle (functions with no argument and no return type.** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 3\_5 : WAP to calculate area of a circle (functions with no argument and no return type.  import java.io.\*;  public class P3\_5\_area\_of\_circle {    //Function with No argument and No return type  public static void areaOfcircle(){  DataInputStream din;  din = new DataInputStream(System.in);  double area;  try{  System.out.println("\nEnter the radius of circle : ");  int r = Integer.parseInt(din.readLine());  area=3.14\*(r\*r);  System.out.println("\nArea of circle = "+area);  }  catch(Exception e){  System.out.println("\nError : "+e);  }  }  public static void main(String[] args){  System.out.println("\nMuhammad Anshad P A");  areaOfcircle();    }  } |

**OUTPUT:**

|  |
| --- |
| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P3\_5\_area\_of\_circle.java  Note: P3\_5\_area\_of\_circle.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P3\_5\_area\_of\_circle  Muhammad Anshad P A  Enter the radius of circle :  7  Area of circle = 153.86  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

|  |  |
| --- | --- |
| **Program # 3\_6** | **Date: 10/12/2023** |
| **WAP to reverse a number (functions with argument and no return type.)** | |

**Source Code:**

|  |
| --- |
| //PROGRAM 3\_6 : WAP to reverse a number (functions with argument and no return type.)  import java.io.\*;  public class P3\_6\_reverse\_number {  //Functions With argument and No return type.  public static void reverseNum(int num){  int digit,rev=0;  while(num!=0){  digit = num%10;  rev=(rev\*10)+digit;  num=num/10;  }  System.out.println("\nReverse of given number is : "+rev);  }  public static void main(String[] args){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the number : ");  int num = Integer.parseInt(din.readLine());  reverseNum(num);  }  catch(Exception e){  System.out.println("\nError : "+e);  }  }  } |
|  |

**OUTPUT:**

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| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P3\_6\_reverse\_number.java  Note: P3\_6\_reverse\_number.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P3\_6\_reverse\_number  Muhammad Anshad P A  Enter the number :  153  Reverse of given number is : 351  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 3\_7** | **Date: 10/12/2023** |
| **WAP to calculate sum of digits of a number (functions with argument and return type.)** | |

**Source Code:**

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| //PROGRAM 3\_7 : WAP to calculate sum of digits of a number (functions with argument and return type.)  import java.io.\*;  public class P3\_7\_sum\_of\_digits {  //Functions With argument and with Return type.  public static int sumOfdigits(int num){  int digit,sum=0;  while(num!=0){  digit = num%10;  sum=sum+digit;  num=num/10;  }  return sum;  }  public static void main(String[] args){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  din = new DataInputStream(System.in);  try{  System.out.println("\nEnter the number : ");  int num = Integer.parseInt(din.readLine());  System.out.println("Sum of digits is : "+sumOfdigits(num));  }  catch(Exception e){  System.out.println("\nError : "+e);  }  }  } |

**OUTPUT:**

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| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P3\_7\_sum\_of\_digits.java  Note: P3\_7\_sum\_of\_digits.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P3\_7\_sum\_of\_digits  Muhammad Anshad P A  Enter the number :  1234  Sum of digits is : 10  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 3\_8** | **Date: 10/12/2023** |
| **WAP to calculate sum of n even numbers (functions with no argument and return type.)** | |

**Source Code:**

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| --- |
| //PROGRAM 3\_8 : WAP to calculate sum of n even numbers (functions with no argument and return type.)  import java.io.\*;  public class P3\_8\_sum\_of\_evenum {  //Functions With No argument and with Return type.  public static int sumOfeven(){  DataInputStream din;  din = new DataInputStream(System.in);  int i,n,sum=0;  try{  System.out.println("\nEnter the limit(n) : ");  n = Integer.parseInt(din.readLine());  for(i=1;i<=n;i++){  if(i%2==0){  sum=sum+i;  }  }  return sum;  }  catch(Exception e){  System.out.println("\nError : "+e);  }  return 0;  }  public static void main(String[] args){  System.out.println("Muhammad Anshad P A");  System.out.println("Sum = "+sumOfeven());    }  } |

**OUTPUT:**

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| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P3\_8\_sum\_of\_evenum.java  Note: P3\_8\_sum\_of\_evenum.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P3\_8\_sum\_of\_evenum  Muhammad Anshad P A  Enter the limit(n) :  10  Sum = 30  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 4\_1** | **Date: 10/12/2023** |
| **WAP with nested functions to find the maximum of three numbers.** | |

**Source Code:**

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| /\*PROGRAM 4\_1 : WAP with nested functions to find the maximum of three numbers.  Function1 should take in two arguments and find the maximum.  Function2 should take in the third number and the maximum from function1 to find the maximum.)\*/  import java.io.\*;  public class P4\_1\_nested\_function {  public static int findMax(int num1,int num2){  return (num1>num2)?num1:num2;  }  //NESTED FUNCTION  public static int findMax(int num1,int num2,int num3){  return findMax(findMax(num1, num2),num3);  }  public static void main(String[] args){  System.out.println("Muhammad Anshad P A");  DataInputStream din;  din = new DataInputStream(System.in);  int num1,num2,num3;  try {  System.out.println("\nEnter the first number : ");  num1 = Integer.parseInt(din.readLine());  System.out.println("\nEnter the second number : ");  num2 = Integer.parseInt(din.readLine());  System.out.println("\nEnter the third number : ");  num3 = Integer.parseInt(din.readLine());  System.out.println("\nMaximum amoung three is : "+findMax(num1, num2,num3));  }  catch (Exception e) {  System.out.println("\nError : "+e);  }    }  } |

**OUTPUT:**

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| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P4\_1\_nested\_function.java  Note: P4\_1\_nested\_function.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P4\_1\_nested\_function  Muhammad Anshad P A  Enter the first number :  -25  Enter the second number :  10  Enter the third number :  -35  Maximum amoung three is : 10  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 4\_2** | **Date: 11/12/2023** |
| **WAP to find the factorial of n, using recursion.** | |

**Source Code:**

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| //PROGRAM 4\_2 : WAP to find the factorial of n, using recursion.  import java.io.\*;  public class P4\_2\_factorial\_recc {  public static int calcFact(int n){  if(n==0 || n==1){  return 1;  }  else{  return n \* calcFact(n-1);  }  }  public static void main(String[] args){  DataInputStream din;  din = new DataInputStream(System.in);  try{  System.out.println("Muhammad Anshad P A");  System.out.println("\nEnter the limit(n): ");  int n=Integer.parseInt(din.readLine());  int fact=calcFact(n);  System.out.println("\nFactorial of "+n+" is : "+fact);  }  catch(Exception e){  System.out.println("\nError : "+e);  }  }  } |

**OUTPUT:**

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| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P4\_2\_factorial\_recc.java  Note: P4\_2\_factorial\_recc.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P4\_2\_factorial\_recc  Muhammad Anshad P A  Enter the limit(n):  5  Factorial of 5 is : 120  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |

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| **Program # 4\_3** | **Date: 11/12/2023** |
| **WAP to display numbers from n to 1 and vice versa, using recursion.** | |

**Source Code:**

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| //PROGRAM 4\_3 : WAP to display numbers from n to 1 and vice versa, using recursion.  import java.io.\*;  public class P4\_3\_disp\_nto1\_rec {  //function to display from n to 1  public static void disp\_N\_to\_1(int n){  if(n>=1){  System.out.println(n + " ");  disp\_N\_to\_1(n-1);  }  }  //function to display from 1 to n  public static void disp\_1\_to\_N(int n){  if(n>=1){  disp\_1\_to\_N(n-1);  System.out.println(n +" ");  }  }  public static void main(String[] args){  DataInputStream din;  din = new DataInputStream(System.in);  try{  System.out.println("Muhammad Anshad P A");  System.out.println("\nEnter the limit(n): ");  int n=Integer.parseInt(din.readLine());  //Disaplaying numbers from n to 1:  System.out.println("\nNumbers from "+ n +" to 1 : ");  disp\_N\_to\_1(n);  //Displaying numbers from 1 to n:  System.out.println("\nNumbers from 1 to "+ n + ":");  disp\_1\_to\_N(n);  }  catch(Exception e){  System.out.println("\nError : "+e);  }  }  } |

**OUTPUT:**

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| E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>javac P4\_3\_disp\_nto1\_rec.java  Note: P4\_3\_disp\_nto1\_rec.java uses or overrides a deprecated API.  Note: Recompile with -Xlint:deprecation for details.  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB>java P4\_3\_disp\_nto1\_rec  Muhammad Anshad P A  Enter the limit(n):  5  Numbers from 5 to 1 :  5  4  3  2  1  Numbers from 1 to 5:  1  2  3  4  5  E:\MCA\SEM 2\JAVA PROGRAMMING (MCA202)\JAVA LAB> |